



(11)

EP 3 001 927 A1

(12)

EUROPEAN PATENT APPLICATION

published in accordance with Art. 153(4) EPC

(43) Date of publication:
06.04.2016 Bulletin 2016/14

(51) Int Cl.: **A45D 34/06**^(2006.01) **B65D 83/76**^(2006.01)

(21) Application number: **14841980.7**

(86) International application number:
PCT/KR2014/005317

(22) Date of filing: 17.06.2014

(87) International publication number:
WO 2015/034165 (12.03.2015 Gazette 2015/10)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR
 Designated Extension States:
BA ME

(30) Priority: 04.09.2013 KR 20130106339

(71) Applicant: **F.S. Korea Industries Inc.**
Seoul 142-703 (KR)

(72) Inventor: **HWANG, Jae Kwang**
Seoul 142-090 (KR)

(74) Representative: **Beetz & Partner mbB**
Patentanwälte
Steinsdorfstraße 10
80538 München (DE)

(54) **COSMETIC CONTAINER HAVING DUAL CONTENTS**

(57) The present invention provides a cosmetic container having dual contents, in which first and second materials are separated, but the second material is discharged into the container body 10 and mixed with the first material by a user in use. Accordingly, it is possible to prevent the second material that is sensitive to external environments from being exposed to the outside until a user uses it.

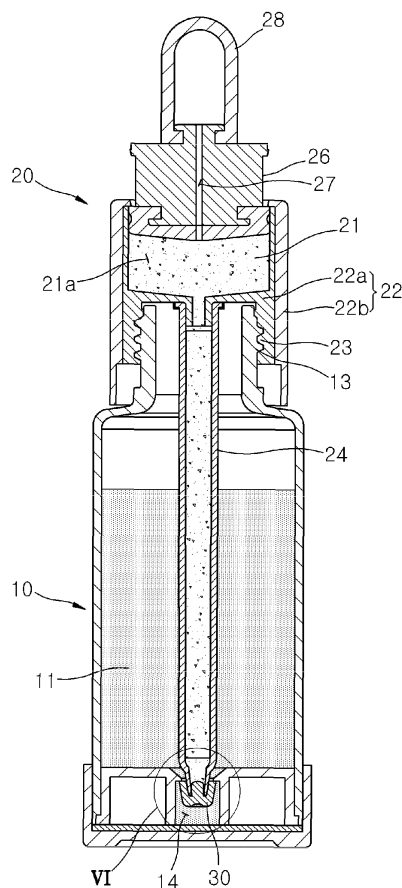


FIG. 5

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a cosmetic container having dual contents, and more particularly, to a cosmetic container having dual contents which can separately keep different components before use, but can mix the components when it is opened.

2. Description of the Related Art

[0002] In general, cosmetics keep a raw material including various mixed effective components in a container and discharge a necessary amount in use.

[0003] Herein, functional cosmetics mostly use function raw materials that are powerful for wrinkle reduction and skin whitening such as vitamins and natural extracts and these raw materials have very unstable properties, so if they are mixed with a base material in advance, they easily acidify and deteriorate in an unstable state.

[0004] In particular, functional cosmetics have shorter available periods than common cosmetics and mostly use vitamins or natural extracts as raw materials, but when the natural extracts are brought in contact with air or exposed to ultraviolet rays, they easily acidify or deteriorate, so the available period further decreases.

[Prior Art Document]

[Patent Document]

[0005] Korean Utility Model Registration No. 20-0348004

SUMMARY OF THE INVENTION

[0006] An object of the present invention is to provide a cosmetic container having dual contents that separately keeps different components before use and mixes the components when it is opened.

[0007] According to an aspect of the present invention, a cosmetic container having dual contents includes: a container body keeping a first material; and a pipette assembly combined with the container body, having a storage space for keeping a second material therein from the outside, including a piston, which presses the second material in the storage space into the container body when being operated by a user, and allowing the discharged second material and the first material to be mixed in the container body.

[0008] The pipette assembly may include a pipette communicating with the storage space and inserted in the container body, and a cap is coupled to an end of the pipette disposed in the container body.

[0009] When the pipette assembly is separated from

the container body, the cap and the pipette may be separated.

[0010] A body holder that locks the cap may be formed in the container body.

5 [0011] The pipette assembly may include: a pipette body keeping the second material; a pipette combined with the pipette body, inserted in the container body, and guiding the second material into the container body; a piston combined with the pipette body and pressing the second material; and a pressing member combined with the piston and supplying negative pressure or positive pressure to the pipette.

10 [0012] The container body and the pipette assembly may have a body thread and a pipette thread, respectively, to be thread-fastened to each other.

[0013] The pipette assembly may be configured such that the piston presses the second material by moving straight down.

[0014] The pipette assembly may be configured such that the piston presses the second material by rotating down.

20 [0015] The container body may include: a container housing keeping the first material, having open upper and lower ends, and combined with the pipette assembly; a stripper coupled to the container housing, receiving the pipette, and having a body holder so that the cap is separated when the pipette is separated; and a container base receiving the stripper and combined with the container housing to close the lower end of the container housing.

25 [0016] The pipette assembly may include: a pipette body keeping the second material and thread-fastened to the container body; a pipette combined with the pipette body, inserted in the container body, and guiding the second material into the container body; and a piston combined with the pipette body and pressing the second material to the pipette.

30 [0017] The pipette body may include: a pipette inner cap thread-fastened to the container body; a pipette housing disposed through the pipette inner cap, combined with the pipette, and keeping the second material; and a pipette outer cap surrounding and fixing the pipette inner cap and the pipette housing.

35 [0018] The piston may include: a piston member closing the pipette housing; a piston holder combined with the piston member; a pressing member combined with the piston holder and supplying positive pressure or negative pressure to the pipette; and a pressure channel communicating with the pressing member and transmitting pressure to the pipette through the piston holder and the piston member.

40 [0019] According to another aspect of the present invention, a cosmetic container having dual contents includes: a container body keeping a first material; and a pipette assembly combined with the container body, having a storage space for keeping a second material therein from the outside, including a piston, which presses the second material in the storage space into the container

body when being operated by a user, and allowing the discharged second material and the first material to be mixed in the container body, in which the pipette assembly includes: a pipette body keeping the second material and thread-fastened to the container body; a pipette combined with the pipette body, inserted in the container body, and guiding the second material into the container body; a piston combined with the pipette body and pressing the second material to the pipette; and a cap coupled to an end of the pipette and preventing the second material from flowing into the container body, and in which the container body includes: a container housing keeping the first material, having open upper and lower ends, and combined with the pipette assembly; a stripper coupled to the container housing, receiving the pipette, and having a body holder so that the cap is separated when the pipette is separated; and a container base receiving the stripper and combined with the container housing to close the lower end of the container housing.

[0020] The present invention provides a cosmetic container having dual contents, in which first and second materials are separated, but the second material is discharged into the container body 10 and mixed with the first material by a user in use. Accordingly, it is possible to prevent the second material that is sensitive to external environments from being exposed to the outside until a user uses it.

[0021] Further, according to the present invention, since the second material that is easily acidified or deteriorated by external environments before a user uses is kept in the pipette assembly 20, the available period for the user is maximally increased.

[0022] Further, according to the present invention, when the pipette assembly 20 is separated from the container body 10, the cap 30 is separated in the container body 10 and the separated cap is kept in the container body 10, so a user does not need to touch the cap 30 to separate the cap 30 from the pipette 24, and accordingly, contamination of the pipette 24 is prevented.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023]

FIG. 1 is a perspective view of a cosmetic container having dual contents according to a first embodiment of the present invention.

FIG. 2 is a front view of FIG. 1.

FIG. 3 is a plan view of FIG. 1.

FIG. 4 is a bottom view of FIG. 1.

FIG. 5 is a cross-sectional view taken along line A-A of FIG. 2.

FIG. 6 is an enlarged view of the portion B in FIG. 2.

FIG. 7 is a perspective view illustrating operation of the cosmetic container illustrated in FIG. 1.

FIG. 8 is a front view of FIG. 7.

FIG. 9 is a cross-sectional view taken along line C-C of FIG. 8.

FIG. 10 is an exemplary view illustrating an operation example of FIG. 5.

FIG. 11 is a perspective view of a cosmetic container having dual contents according to a second embodiment of the present invention.

FIG. 12 is an exemplary view illustrating operation of FIG. 11.

FIG. 13 is an exploded perspective view of FIG. 11.

FIG. 14 is a front cross-sectional view of FIG. 11.

FIG. 15 is a front cross-sectional view of FIG. 12.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] Hereinafter, the present invention will be described in detail with reference to the accompanying drawings.

[0025] In describing the present invention, well-known functions or constructions will not be described in detail since they may unnecessarily obscure the understanding of the present invention. It should be noted that even if the same terms are used but they indicate different components, they are not given the same reference numerals.

[0026] The terms described hereafter are terms defined in consideration of the functions in the present disclosure and may be change in accordance with the intention of a user such as an experimenter and a measurer and a custom, so the definition should be based on the entire description of the present disclosure.

[0027] Terms used in the specification, 'first', 'second', etc., may be used to describe various components, but the components are not to be construed as being limited to the terms. The terms are used to distinguish one component from another component. For example, the 'first' component may be named the 'second' component, and vice versa, without departing from the scope of the present invention. The term 'and/or' includes a combination of a plurality of items or any one of a plurality of terms. Terms used in the present specification are used only in order to describe specific exemplary embodiments rather than limiting the present invention.

[0028] As used herein, the singular forms are intended to include the plural forms as well, unless the context clearly indicates otherwise.

[0029] Unless otherwise defined, all terms including technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which the present invention belongs. It must be understood that the terms defined by the dictionary are identical with the meanings within the context of the related art, and they should not be ideally or excessively formally defined unless the context clearly dictates otherwise.

[0030] Further, unless explicitly described otherwise, "comprising" any components will be understood to imply the inclusion of other components rather than the exclusion of any other components.

[0031] FIG. 1 is a perspective view of a cosmetic container having dual contents according to a first embodiment of the present invention, FIG. 2 is a front view of FIG. 1, FIG. 3 is a plan view of FIG. 1, FIG. 4 is a bottom view of FIG. 1, FIG. 5 is a cross-sectional view taken along line A-A of FIG. 2, FIG. 6 is an enlarged view of the portion B in FIG. 2, FIG. 7 is a perspective view illustrating operation of the cosmetic container illustrated in FIG. 1, FIG. 8 is a front view of FIG. 7, FIG. 9 is a cross-sectional view taken along line C-C of FIG. 8, and FIG. 10 is an exemplary view illustrating an operation example of FIG. 5.

[0032] As illustrated in the figures, a cosmetic container having dual contents according to an embodiment of the present invention separately keeps two kinds of make-ups before use, and mixes them when it opens.

[0033] To this end, the cosmetic container includes a container body 10 keeping a first material 11 and a pipette assembly 20 combined with the container body 10 and keeping a second material 21.

[0034] The container body 10 has an opening at the top and a body thread 13 around the outer surface of the upper portion.

[0035] A cap hole 14 where a cap 30 that will be described below and a body holder 15 where the cap 30 is fitted to be locked are formed inside the container body 10.

[0036] The pipette assembly 20 includes a pipette body 22 keeping the second material 21, a pipette thread 23 formed around the inner side of the pipette body 22, a pipette 24 combined with the pipette body 22, inserted in the container body 10, and guiding the second material 21 into the container body 10, a piston 26 combined with the pipette body 22 and pressing the second material 21, and a pressing member 28 combined with the piston 26 and supplying negative pressure or positive pressure to the pipette 24.

[0037] The pipette body 22 is composed of an inner body 22a having the pipette thread 23 and an outer body 22b disposed outside the inner body 22a, but unlike this embodiment, the inner body 22a and the outer body 22b may be integrally formed.

[0038] In particular, a storage space for keeping the second material 21 is formed in the inner body 22a.

[0039] The pipette body 22 may be made of a material that is opaque or reflects light to block light such as the ultraviolet rays traveling to the storage space 26a, so deterioration such as acidification of the second material 21 in the storage space 26a is prevented.

[0040] The pipette 24 is formed in a pipe shape with the upper end communicating with the storage space 21a of the inner body 22a and the lower end inside the container body 10. In this embodiment, the lower end of the pipette 24 is inserted in the cap hole 14.

[0041] The piston 26 combined with the pipette body 22 moves toward the storage space 21a, and in this process, the second material 21 in the storage space 21a presses and discharges the second material 21 to the

pipette 24.

[0042] Herein, a pressure channel 27 that communicates with the pressing member 28 is formed in the piston 26, so a pressure change by the pressing member 28 can be transmitted to the pipette 24.

[0043] The pressing member 28 is made of elastic rubber in this embodiment and can supply negative pressure or positive pressure to the pipette 24 when being operated by a user.

[0044] In this embodiment, the piston 26 discharges the second material 21 to the pipette 24 by moving along the inner body 22a when being operated by a user, but unlike this embodiment, the piston 26 may be rotated with respect to the pipette body 22 to discharge the second material 21 to the pipette 24.

[0045] That is, a thread may be formed on the inner side of the inner body 22a to rotate the piston 26 along the thread such that the second material 21 is discharged to the pipette 24 by rotation of the piston 26.

[0046] Further, projections may be formed with predetermined intervals on the inner side of the inner body 22a to lock the piston 26 so that the second material 21 can be discharged in a predetermined amount by a user.

[0047] Meanwhile, the cap 30 is coupled to the lower end of the pipette 24 to prevent the second material 21 from flowing into the container body 10.

[0048] Herein, the cap 30 is combined with the pipette 24 and inserted in the cap hole 14, and when the pipette assembly 20 is separated from the container body 10, the cap 30 and the pipette 24 are separated.

[0049] Operation of the cosmetic container for dual contents according to a first embodiment of the present invention is described in detail with reference to the drawings.

[0050] First, the second material 21 is in the storage space 26a of the pipette assembly 20 and the cap 30 is coupled to the lower end of the pipette 24 to prevent leakage of the second material 21.

[0051] With the cap 30 coupled to the pipette assembly 20, the pipette 24 is inserted in the container body 10, and the pipette assembly 20 and the container body 10 are thread-fastened.

[0052] In this process, the cap 30 is inserted into the cap hole 14, in detail, passes the body holder 15 and is positioned under the body holder 15.

[0053] Thereafter, when a user separates the pipette assembly 20 from the container body 10 by turning it, the pipette assembly 20 is moved up and the cap 30 and the body holder 15 are locked to each other, in which the cap 30 is separated from the pipette assembly 20.

[0054] Accordingly, the lower end of the pipette 24 is opened with the cap 30 left in the cap hole 14.

[0055] Thereafter, when the user presses the piston 26 exposed over the pipette body 22 toward the storage space 26a, the second material 21 in the storage space 26a is discharged into the container body 10 by the piston 26 pressed down.

[0056] The discharged second material 21 is moved

down in the container body 10 and mixed with the first material 11, in which the first and second materials 11 and 21 may make a chemical reaction, depending on their properties.

[0057] After the first and second materials 11 and 21 are mixed, the user moves the mixture into the pipette 24 by operating the pressing member 28 and then takes out the pipette 24 from the container body 10, so the user can use the mixture in the pipette 24 in a desired amount.

[0058] After using the pipette assembly 20, the user couples the pipette assembly 20 back to the container body 10 by turning it, so the lower end of the pipette 24 is inserted into the cap hole 14, but is not coupled to the cap 30.

[0059] Meanwhile, although the container body 10 and the pipette assembly 20 are thread-fastened in this embodiment, unlike this embodiment, they may be fitted to each other in a one-touch type by being moved up/down, so the coupling way of the container body 10 and the pipette assembly 20 may be implemented in various ways by those skilled in the art.

[0060] FIG. 11 is a perspective view of a cosmetic container having dual contents according to a second embodiment of the present invention, FIG. 12 is an exemplary view illustrating operation of FIG. 11, FIG. 13 is an exploded perspective view of FIG. 11, FIG. 14 is a front cross-sectional view of FIG. 11, and FIG. 15 is a front cross-sectional view of FIG. 12.

[0061] The cosmetic container having dual contents according to this embodiment is operated in the same principle as the first embodiment, but includes different components from the first embodiment.

[0062] The cosmetic container having dual contents includes a container body 110 keeping a first material and a pipette assembly 120 combined with the container body 110 and keeping a second material 21.

[0063] The container body 110 includes: a container housing 112 keeping the first material, having open upper and lower ends, and having a body thread 13 for coupling to the pipette assembly 120; a stripper 114 coupled to the lower portion of the container housing 112, receiving the pipette 124, and having a body holder 15 for separating the cap 30 when the pipette 124 is separated; a container packing 116 being in close contact with the lower portion of the stripper 114; and a container base 118 receiving the stripper 114, coupled to the lower portion of the container housing 112 to close the lower end of the container housing 112.

[0064] With the stripper 114 disposed in the container housing 112, when the pipette 120 is separated, the cap 30 is locked to the stripper 114, and the separated cap 30 is left in the stripper 114.

[0065] The pipette assembly 120 includes a pipette body 130 keeping the second material and thread-fastened to the container body 110, a pipette 124 combined with the pipette body 130, inserted in the container body 110, and guiding the second material into the container body 110, and a piston 140 combined with the pipette

body 130 and pressing the second material to the pipette 124.

[0066] The pipette body 130 includes a pipette inner cap 132 having a thread on the inner side and thread-fastened to the container body 110, a pipette housing 134 disposed through the pipette inner cap 132, combined with the pipette 124, and keeping the second material, and a pipette outer cap 136 surrounding and fixing the pipette inner cap 132 and the pipette housing 134.

[0067] The pipette housing 134 and the pipette outer cap 136 are open at the top so that the piston 140 is inserted.

[0068] The piston 140 includes a piston member 142 closing the pipette housing 134, a piston holder 144 combined with the piston member 142, a pressing member 148 combined with the piston holder 144 and supplying positive pressure or negative pressure to the pipette 124, a piston cover 146 surrounding the piston holder 144 and the pressing member 148, and a pressure channel 127 communicating with the pressing member 148 and transmitting pressure to the pipette 124 through the piston holder 144 and the piston member 142.

[0069] The piston member 142 presses the second material to the pipette 124 by vertically moving on the inner side of the pipette housing 134.

[0070] The piston holder 144 combines the pressing member 148 and the piston member 142.

[0071] The pressing member 148 is made of an elastic material and restored after being elastically transformed by a user.

[0072] The other configuration is the same as that of the first embodiment, so it is not described in detail.

[0073] Although exemplary embodiments of the present invention were described above with reference to the accompanying drawings, the present invention is not limited thereto and those skilled in the art would understand that the present invention may be implemented in various ways without changing the necessary features or the spirit of the present invention. Therefore, it should be understood that the exemplary embodiments are not limiting but illustrative in all aspects.

Claims

1. A cosmetic container having dual contents, comprising:

a container body keeping a first material; and
a pipette assembly combined with the container body, having a storage space for keeping a second material therein from the outside, including a piston, which presses the second material in the storage space into the container body when being operated by a user, and allowing the discharged second material and the first material to be mixed in the container body.

2. The cosmetic container of claim 1, wherein the pipette assembly includes a pipette communicating with the storage space and inserted in the container body, and a cap is coupled to an end of the pipette disposed in the container body. 5
3. The cosmetic container of claim 2, wherein when the pipette assembly is separated from the container body, the cap and the pipette are separated. 10
4. The cosmetic container of claim 2, wherein a body holder that locks the cap is formed in the container body.
5. The cosmetic container of claim 1, wherein the pipette assembly includes: 15
 - a pipette body keeping the second material;
 - a pipette combined with the pipette body, inserted in the container body, and guiding the second material into the container body;
 - a piston combined with the pipette body and pressing the second material; and
 - a pressing member combined with the piston and supplying negative pressure or positive pressure to the pipette. 20 25
6. The cosmetic container of claim 1, wherein the container body and the pipette assembly have a body thread and a pipette thread, respectively, to be thread-fastened to each other. 30
7. The cosmetic container of any one of claims 1 to 6, wherein the pipette assembly is configured such that the piston presses the second material by moving straight down. 35
8. The cosmetic container of any one of claims 1 to 6, wherein the pipette assembly is configured such that the piston presses the second material by rotating down. 40
9. The cosmetic container of claim 2, wherein the container body includes: 45
 - a container housing keeping the first material, having open upper and lower ends, and combined with the pipette assembly;
 - a stripper coupled to the container housing, receiving the pipette, and having a body holder so that the cap is separated when the pipette is separated; and
 - a container base receiving the stripper and combined with the container housing to close the lower end of the container housing. 50 55
10. The cosmetic container of claim 2, wherein the pipette assembly includes:
 - a pipette body keeping the second material and thread-fastened to the container body;
 - a pipette combined with the pipette body, inserted in the container body, and guiding the second material into the container body; and
 - a piston combined with the pipette body and pressing the second material to the pipette.
11. The cosmetic container of claim 10, wherein the pipette body includes:
 - a pipette inner cap thread-fastened to the container body;
 - a pipette housing disposed through the pipette inner cap, combined with the pipette, and keeping the second material; and
 - a pipette outer cap surrounding and fixing the pipette inner cap and the pipette housing.
12. The cosmetic container of claim 10, wherein the piston includes:
 - a piston member closing the pipette housing;
 - a piston holder combined with the piston member;
 - a pressing member combined with the piston holder and supplying positive pressure or negative pressure to the pipette; and
 - a pressure channel communicating with the pressing member and transmitting pressure to the pipette through the piston holder and the piston member.
13. A cosmetic container having dual contents, comprising:
 - a container body keeping a first material; and
 - a pipette assembly combined with the container body, having a storage space for keeping a second material therein from the outside, including a piston, which presses the second material in the storage space into the container body when being operated by a user, and allowing the discharged second material and the first material to be mixed in the container body, wherein the pipette assembly includes: a pipette body keeping the second material and thread-fastened to the container body; a pipette combined with the pipette body, inserted in the container body, and guiding the second material into the container body; a piston combined with the pipette body and pressing the second material to the pipette; and a cap coupled to an end of the pipette and preventing the second material from flowing into the container body, and the container body includes: a container housing keeping the first material, having open upper and lower ends, and combined with the pipette

assembly; a stripper coupled to the container housing, receiving the pipette, and having a body holder so that the cap is separated when the pipette is separated; and a container base receiving the stripper and combined with the container housing to close the lower end of the container housing.

5

10

15

20

25

30

35

40

45

50

55

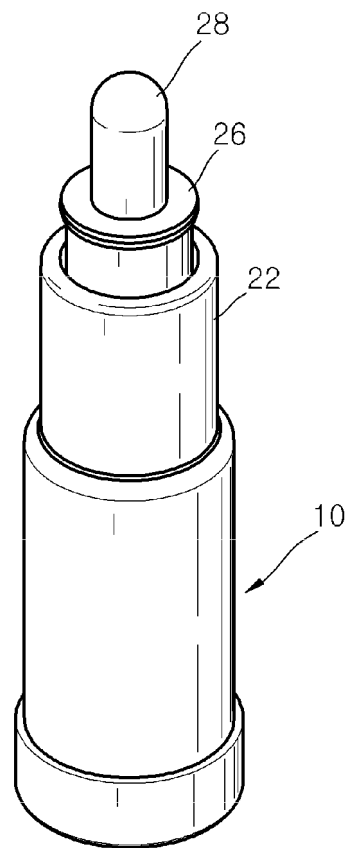


FIG. 1

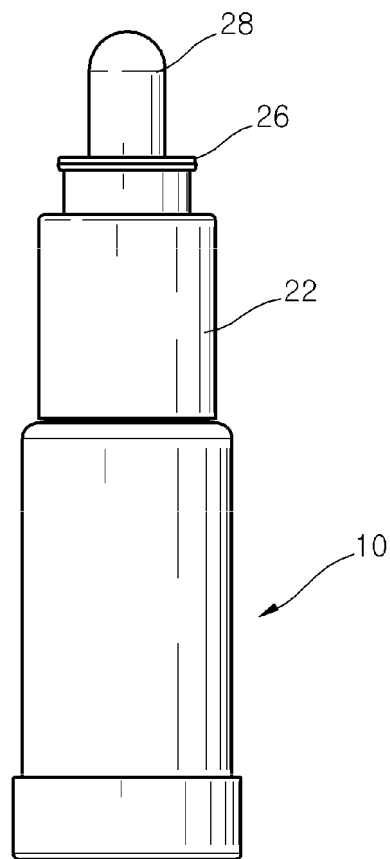


FIG. 2

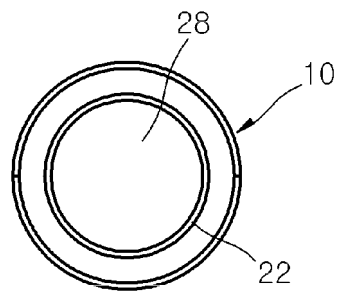


FIG. 3

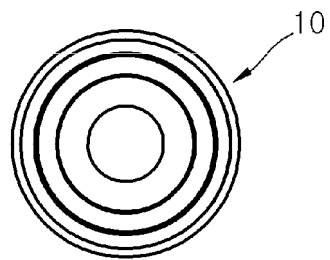


FIG. 4

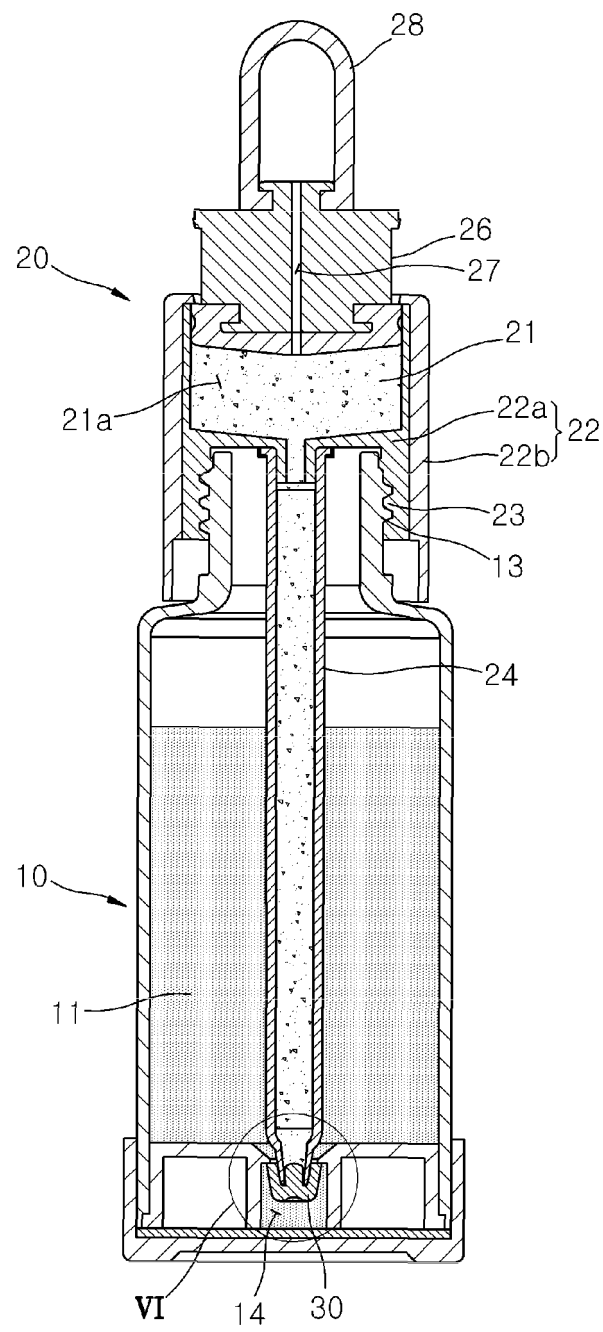


FIG. 5

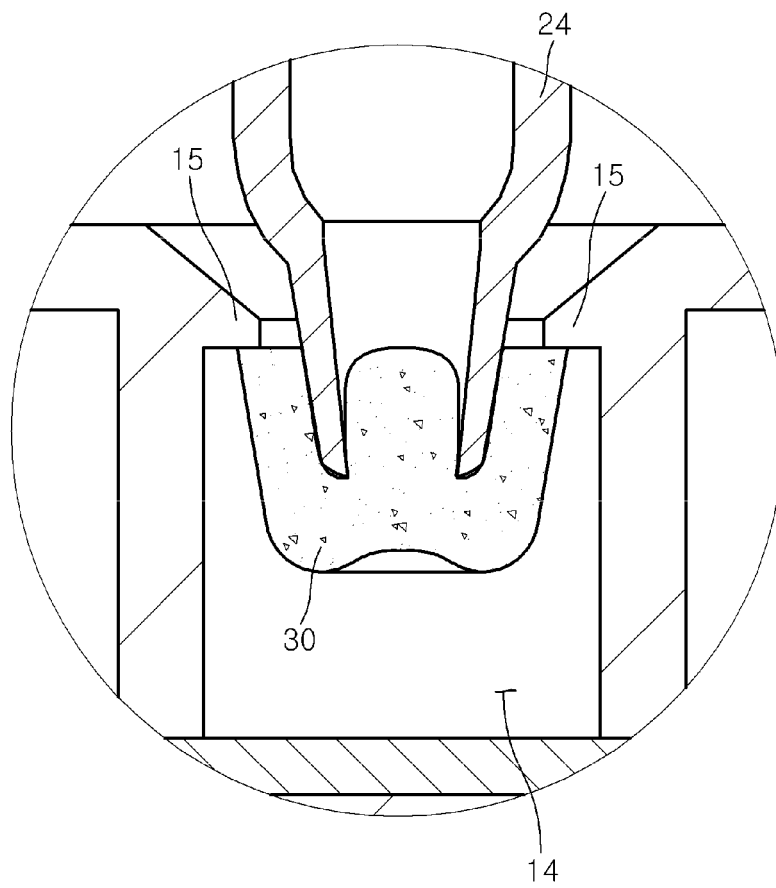


FIG. 6

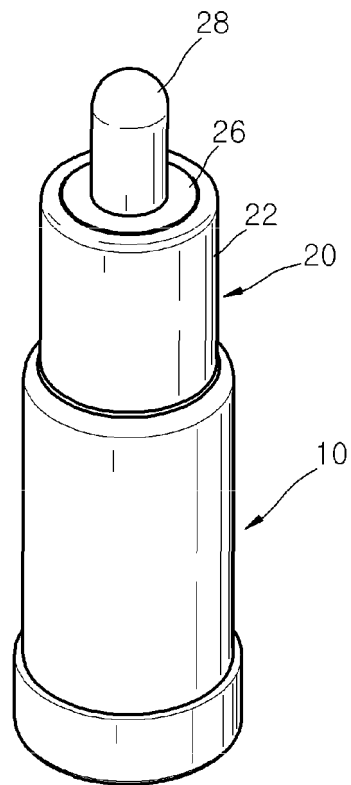


FIG. 7

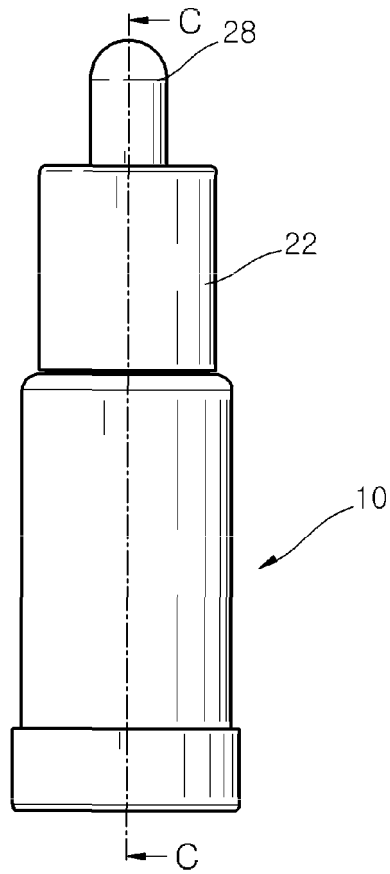


FIG. 8

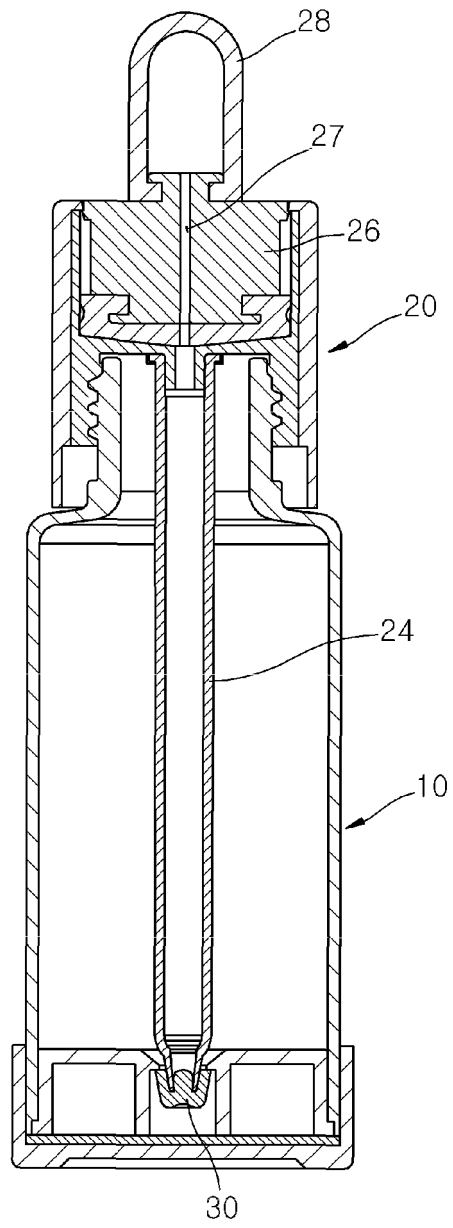


FIG. 9

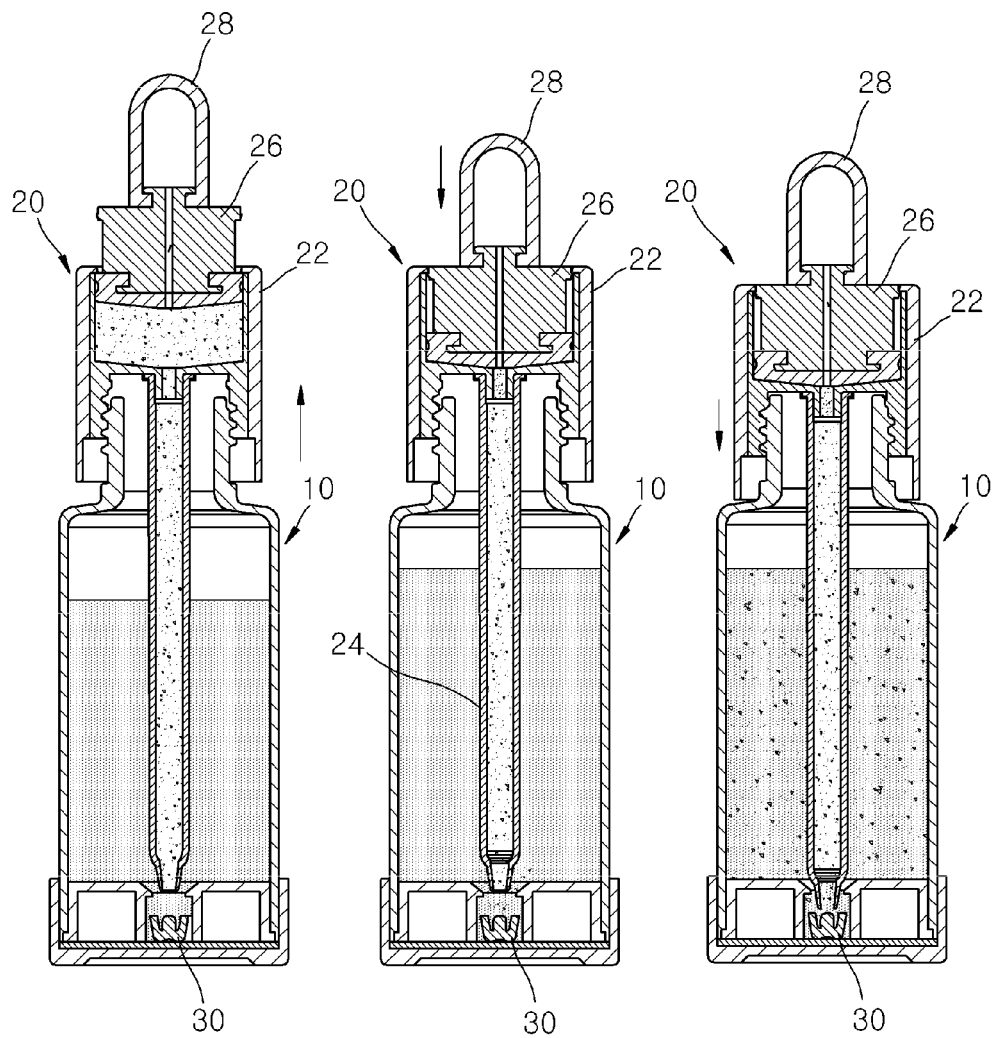


FIG. 10A

FIG. 10B

FIG. 10C

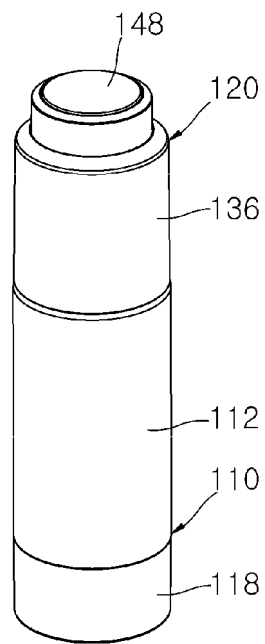


FIG. 11

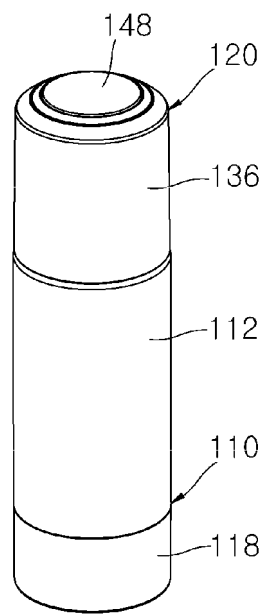


FIG. 12

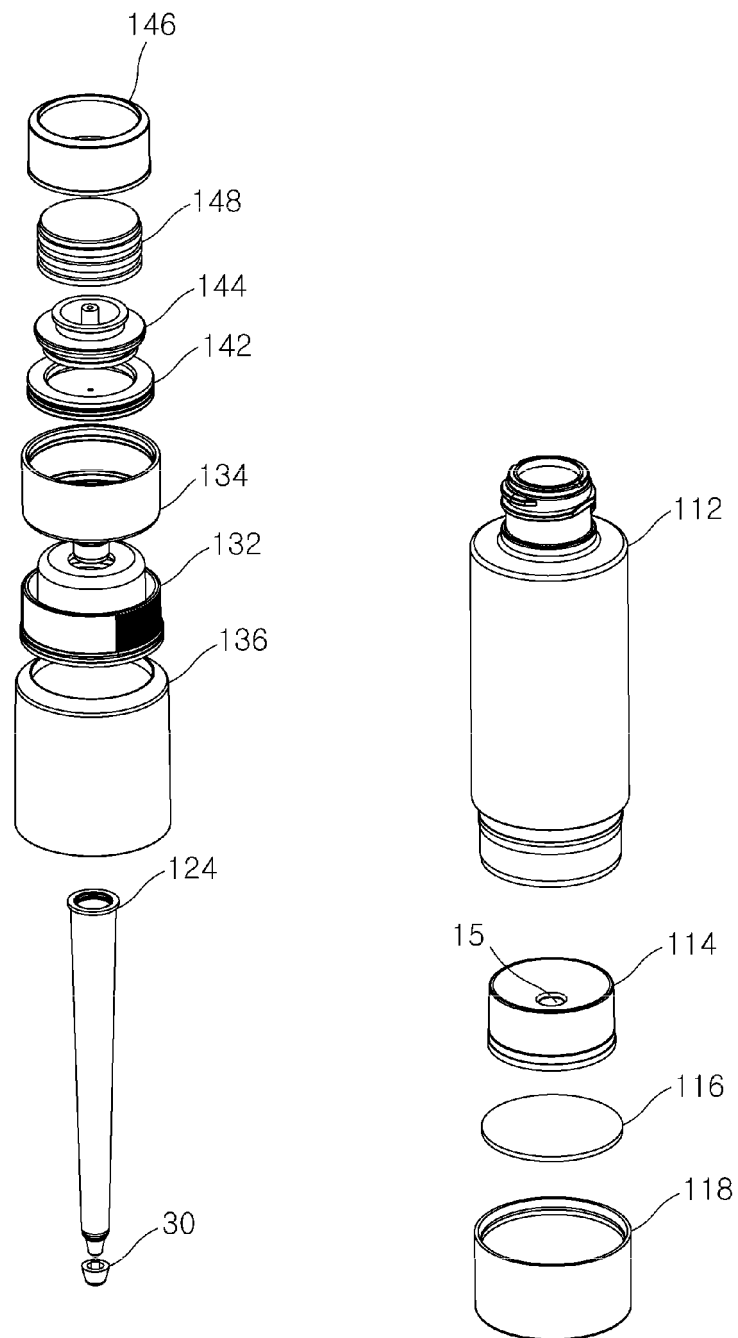


FIG. 13

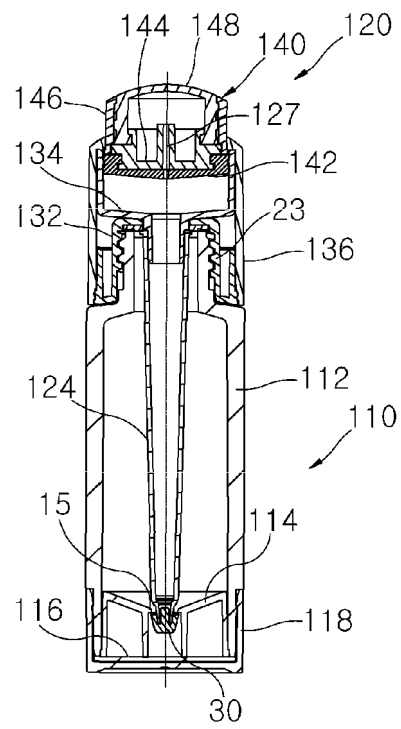


FIG. 14

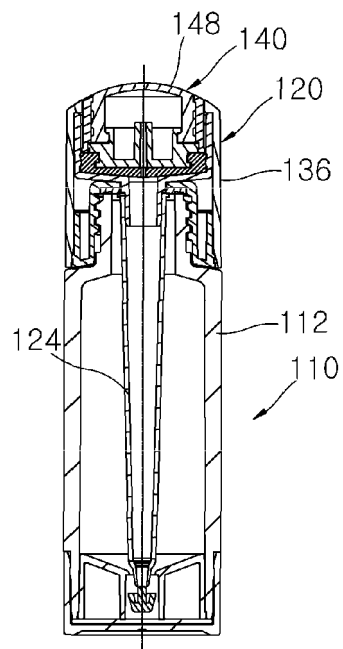


FIG. 15

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2014/005317

A. CLASSIFICATION OF SUBJECT MATTER

A45D 34/06(2006.01)i, B65D 83/76(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A45D 34/06; B65D 83/76; A45D 40/24; B65D 81/32; A45D 34/00; A45D 34/04; A45D 33/26

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models: IPC as above

Japanese Utility models and applications for Utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & Keywords: pipette, spoid, liquid container, piston, separation, mixing, cap, cap.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 10-2012-0140563 A (HANA CO., LTD.) 31 December 2012	1,6-8
A	See abstract, paragraphs [28], [33], [34], [40], [43]-[46], figures 3, 8, 9	2-5,9-13
A	KR 20-0362397 Y1 (YONWOO CO., LTD.) 18 September 2004 See the entire document	1-13
A	KR 10-2012-0054715 A (YONWOO CO., LTD.) 31 May 2012 See the entire document	1-13
A	KR 10-1301917 B1 (TOLY KOREA INC. et al.) 30 August 2013 See the entire document	1-13

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family


Date of the actual completion of the international search

13 AUGUST 2014 (13.08.2014)

Date of mailing of the international search report

14 AUGUST 2014 (14.08.2014)

Name and mailing address of the ISA/KR

 Korean Intellectual Property Office
Government Complex-Daejeon, 189 Seonsa-ro, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2014/005317

Patent document cited in search report	Publication date	Patent family member	Publication date
KR 10-2012-0140563 A	31/12/2012	NONE	
KR 20-0362397 Y1	18/09/2004	WO 2006-004236 A1	12/01/2006
KR 10-2012-0054715 A	31/05/2012	NONE	
KR 10-1301917 B1	30/08/2013	NONE	

Form PCT/ISA/210 (patent family annex) (July 2009)

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- KR 200348004 [0005]